

REMARKS

Claims 1-3, 5-9, 11-15, and 17-18 are pending in this application. Claims 1-3, 5-9, 11-15, and 17-18 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,651,106 to Ashburn (hereinafter "Ashburn"). Applicants thank Examiners Amini and Brier for the telephonic interview conducted with the undersigned on April 15, 2004. During the interview, the present invention was explained in connection with Figures 5a and 6. A proposed amended claim 1 was discussed, and it was agreed upon that the amended claim 1 as presented in this Reply distinguishes the present invention over Ashburn.

By the foregoing amendments, Applicants have amended the claims to further define and clarify the operation of the present invention. The independent claims (i.e., claims 1, 7, and 13) have been amended to clarify that the basic state operations are sorted by arithmetic operation type prior to the basic state operations being performed. As discussed with the Examiners, the term "sorting" more clearly defines what is being done with the basic state operations. The independent claims have also been amended to clarify that the basic state operations are assigned to a commonly used arithmetic unit after the basic state operations have been sorted.

Ashburn discloses a method and apparatus for generating triangles that can be easily filled by a triangle fill scan converter. The apparatus includes a front end

board 10 for receiving graphics primitives to be rendered, with each primitive being specified by coordinate data, color data, and texture data. A frame buffer board 14 interpolates the primitive data to generate the image to be displayed on a screen. Both the front end board 10 and the frame buffer board 14 are pipelined to be able to operate on multiple primitives simultaneously (see column 4, lines 36-66). In one embodiment of Ashburn, certain hardware components may be duplicated to increase the bandwidth of the system (see column 7, lines 56-60).

The present invention relates to a method and apparatus for processing video image data, including position data, color data, and texture data. Different tasks (e.g., moving or scaling) can be performed on each image data type. Each task consists of a series of basic state operations that may need to be performed in a particular sequence. Each basic state operation is a single arithmetic operation, such as addition or multiplication. To quickly process image data, the present invention provides a common arithmetic unit for each basic state operation type. The basic state operations are sorted based upon the arithmetic operation type, regardless of what task the operation originated from. The sorted basic state operations are then assigned to an appropriate common arithmetic unit and performed. Unless a task requires that the basic state operations be performed in a particular order, basic state operations relating to different tasks can be concurrently performed by different arithmetic units. (See page 6, lines 1-12.)

The present invention differs from Ashburn in that Ashburn does not filter the image data by the basic state operation to be performed on the data. In regard to the rejection of claim 1, the portions of Ashburn cited by the Examiner do not disclose the present invention. Ashburn sorts the vertices of a triangle such that the longest edge of the triangle extends in the Y direction (see column 12, lines 32-38). This sorting is performed to simplify the operation of the fill scan converter (see column 11, lines 52-57). Sorting based on the vertices of a triangle is not the same as sorting the basic state operations based on the arithmetic operation type to be performed, as is done in the present invention.

The same remarks as applied to claim 1 are equally applicable to the Examiner's rejections of independent claims 7 and 13. Because the independent claims (i.e., claims 1, 7, and 13) of the present invention are distinguishable over Ashburn, the dependent claims (i.e., claims 2, 3, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18) are also distinguishable over Ashburn and no further discussion of the dependent claims is needed.

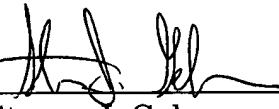
It is respectfully submitted that the amendments and remarks made herein place pending claims 1-3, 5-9, 11-15, and 17-18 in condition for allowance. Accordingly, entry of this amendment as well as reconsideration and allowance of pending claims 1-3, 5-9, 11-15, and 17-18 are respectfully requested.

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Application No.: 09/632,759

If the Examiner does not believe that the claims are in condition for allowance, the Examiner is respectfully requested to contact the undersigned at 215-568-6400.

Respectfully submitted,

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Enclosures